

AMENDMENTS TO THE CLAIMS

Claim 1 (cancelled)

Claim 2 (cancelled)

Claim 3 (Previously Presented) The transmitter of Claim 22, wherein the phase detector is further coupled to a reference signal so that the operating frequency of the voltage controlled oscillator is related to the frequency of the reference signal.

Claim 4 (Previously Presented) The transmitter of Claim 21, wherein a power amplifier is coupled between the voltage controlled oscillator and the antenna.

Claim 5 (original) The transmitter of Claim 4, wherein the gain of the power amplifier is controlled by a power controller.

Claim 6 (Previously Presented) The transmitter of Claim 5, wherein the power amplifier, the voltage-controlled oscillator, and the power controller are formed on a single integrated circuit.

Claim 7 (Previously Presented) The transmitter of Claim 22, wherein the phase-locked loop further includes a prescaler and a divide-by M circuit coupled between the voltage-controlled oscillator and the phase detector.

Claim 8 (original) The transmitter of Claim 7, wherein the voltage controlled oscillator and the phase-locked loop are formed on a single integrated circuit.

Claims 9-13 (cancelled)

Claim 14 (Previously Presented) The transmitter of Claim 22, further including a reference oscillator supplying a signal of a reference frequency to the phase detector, wherein the reference oscillator, the voltage controlled oscillator, and the phase-locked loop are formed on a single integrated circuit.

Claim 15 (original) The transmitter of Claim 14, wherein the reference oscillator is of the Colpitts variety and is coupled to receive a signal from a timing device external to the single integrated circuit.

Claim 16 (Previously Presented) The transmitter of Claim 21, further including a charge pump supplying a voltage to the voltage-controlled oscillator, wherein the charge pump and the voltage-controlled oscillator are formed on a single integrated circuit.

Claim 17 (Previously Presented) The transmitter of Claim 21, further including a bandgap reference circuit generating reference voltages that are temperature and supply voltage stable, the bandgap reference circuit and the voltage-controlled oscillator formed on a single integrated circuit.

Claim 18 (Previously Presented) The transmitter of Claim 21, further including a shutdown mode circuit coupled to the voltage-controlled oscillator, the shutdown mode circuit and the voltage-controlled oscillator being formed on a single integrated circuit.

Claim 19 (Previously Presented) The transmitter of Claim 21, further including a data encoder coupled between a data input

pad and the voltage-controlled oscillator, the data encoder and the voltage-controlled oscillator being formed on a single integrated circuit.

Claim 20 (cancelled)

Claim 21 (Presently Amended) A transmitter comprising:
a voltage-controlled oscillator having an operating frequency;
an antenna, the antenna forming part of a tuned circuit coupled to the voltage-controlled oscillator,
a differential structure of varactor diodes;
a varactor charge pump to provide a bias charge for varactor diodes in the differential structure of varactor diodes; and
a tuned circuit including the antenna and the differential structure of varactor diodes, wherein the differential structure of varactor diodes tunes the resonance point of the antenna to the frequency of the voltage-controlled oscillator.

Claim 22 (Previously Presented) The transmitter of Claim 21, wherein the voltage-controlled oscillator is coupled serially with a phase detector and a loop filter to form a phase-locked loop.

Claim 23 (Previously Presented) The transmitter of Claim 21, wherein the differential structure of varactor diodes, the voltage-controlled oscillator, and the varactor charge pump are formed on a single integrated circuit.

Claim 24 (Previously Presented) The transmitter of Claim 21, wherein the varactor diodes include an array of capacitors that can be switched in and out of the tuned circuit.

Claim 25. (Previously Presented) The transmitter of Claim 21, wherein the differential structure of varactor diodes and the voltage-controlled oscillator are formed on a single integrated circuit.